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the 31st volume of Silliman's Journal. They, however, had found it only in brackish water, and upon the operculæ or gill covers. These had been found in a creek at least fifty miles from salt water, and upon the gills themselves, which were highly congested, apparently from the attacks of these animals.

June 8th.

Vice President LEA in the Chair.

Twenty-nine members present.

Announcements were made of the death of Dr. Johannes Müller, a Correspondent, and of Robert A. Caldeleugh, late a member of the Academy.

June 15th.

Dr. T. B. WILSON in the Chair.

Thirty-three members present.

Mr. Lea exhibited a specimen of *Unio rubiginosus* Lea, and remarked that, at a late meeting, he had called the attention of the Academy to a specimen of *Unio multiplicatus* Lea, which had *both leaves* of the branchiæ on *both sides* charged with young shells, which he then supposed to be peculiar to that species. Within a few days he had received from Cincinnati a number of species in a living state; and he was surprised to find, in a fine female *rubiginosus*, which he exhibited to the Academy, *both leaves on both sides* fully charged, the whole width, with sacks of *ova* of a deep rose color. These were not matured into the perfect shell, but each ovum was filled with *red granulations*, which gave a clear red tint to the whole of the four masses. On making an incision into the abdominal mass, he found the ovary fully charged with red eggs, which, passing out of the cut made by the scalpel, gave the appearance of arterial blood. The mass of the soft parts of this species is usually salmon-color or orange, but it is sometimes white, and this female was of the latter color.

June 22d.

Vice President BRIDGES in the Chair.

Thirty-one members present.

The following papers being presented for publication in the Proceedings, were referred to Committees:

Prodromus descriptionis Animalium evertibratorum, quæ in Expeditione ad Oceanum Pacificum Septentrionalem, a Republica Federata missa, Cadwaladaro Ringgold et Johanne Rodgers ducibus, observavit et descripsit W. Stimpson. Pars. VI. Crustacea Oxystomata.

Descriptions of seven new species of Margaritana, and four new species of Anodonta, by Isaac Lea.

Notes to a second edition of a Geological Map of Nebraska and Kansas, by F. V. Hayden, M. D.

A letter from Mr. Edward Harris was read, containing the following statements regarding specimens of *Salmo Gloverii Girard*, presented this evening:

1858.]

In the first place I would remark, that Mr. Girard's description of the color of the belly (yellowish) has doubtless arisen from his description being taken from the specimen as preserved in spirits, as it accorded with the coloring of my fish, which had been only two weeks in spirits; whereas, when put in, they were bright silvery below the medial line and over the belly, as is the case with all the fish taken at the outlet of the Grand Lake, on the western branch of the St. Croix River, as I also found them many years since on this stream as well as the eastern branch, in the fall of the year. These fish are taken also in moderate quantities lower down the stream, but in the waters below Lewey's Island, which are of a darker color, and constantly filled with sawdust from the mills, the fish lose their silvery brightness and have the appearance of having been immersed in a yellowish dye; these fish, too, are always in poor condition. In the young state, say from six to eight inches in length, they have almost invariably an irregular row of bright red spots placed along the medial line, some on one side, and some on the other. It was considered a very remarkable circumstance by the fishermen on the spot, that a fish so large as the smaller of these two should have the red spots, which this one had very distinctly before it was put in the spirits.

It has been heretofore considered by those who were acquainted with this fish, that they were entirely confined to the waters of the St. Croix, including its two branches and their lakes, in fact confined almost entirely to the lakes and their outlets; and it is only on this trip that I have heard of specimens having been taken, as a rarity, in three small lakes which empty into the lower St. Croix, and into the Passamaquoddy Bay. The fish described by Mr. Girard, as found in Union River, would have but a short distance farther to travel in the salt water before entering that river. It is therefore pretty certain that they are, as far as yet known, confined to the waters of the St. Croix and streams of easy access therefrom by sea. They appear not to be known in New Brunswick, except in one of the small lakes alluded to, which empties its waters on that side of the river. Mr. Perley is said to be unacquainted with the fish, except from report. I will mention another fact in regard to the Union River, which may throw some light on the history of this fish. I met accidentally at Bangor with a gentleman of that place, an ardent sportsman, who told me he had caught in a small lake tributary to that river, a *small salmon*; that the waters of this lake had been dammed for saw mills about thirty years ago, shutting off as he supposed, the return of some salmon which had entered it for the purpose of spawning, and, that they had continued to breed there since, and had from want of access to the sea, deteriorated in size, and said also that several had been taken since. Now this gentleman had never seen the salmon trout (its universal name there,) of the St. Croix. Now taking into consideration that Agassiz has pronounced this fish the true *Salmo Salar*, which has at some former time, by some convulsion of nature, been shut up in these St. Croix Lakes, and only had the access to salt water restored by another geological change after the fish had been bred there so long as to lose its habits of migration, we need not be surprised that this gentleman should take this fish to be a small salmon.

These fish, as taken, may be said to run from one to five pounds in weight, as it is very rare to take fish of a size intermediate between the small fish with the red spots and those of the size of these specimens. I regret that I did not procure the small fish. I took a number of them at Lewey's Island, but could procure no spirits to preserve them, and after returning from Calais, I could catch none of the fish.

As a game fish, affording fine sport to the fly fisher, I doubt whether it has its equal on this continent, with the exception of the true salmon. Its strength and agility are surprising; when hooked it will frequently make a succession of leaps of two and three feet clear of the water. It is most readily taken with the fly in the most rapid waters above the dam at the foot of the Grand Lake, which has been made for the purpose of running logs. They are readily taken

[June,

while the gates are up, but as soon as they are closed and the water becomes still, they decline the fly, but will still take the bait; at this time it is necessary to fish below the dam, where there is still a very rapid current from leakage and overflow. The brook trout, *S. fontinalis*, is taken in the same waters, and in the stiller waters above, a large lake trout, there called the Togue, which differs from the *Salmo confinis* of the northern lakes, by having a more deeply forked tail like the *S. siskewet* of Lake Superior.

Another striking characteristic in the history of this fish, is the remarkable development, in the male, of the point of the lower jaw, or chin, whereby it becomes elongated and hooked, during and previous to the seasons of sexual connexion and spawning, which are simultaneous in fishes. This peculiarity, which, so far as I am aware, has been heretofore considered to belong to the type of the genus alone, the *Salmo salar*, adds much force to the theory of Mr. Agassiz to which I alluded before, (and I believe I am correctly informed that he has advanced such a theory). This fact, which I can vouch for from personal observation as well as other undeniable testimony, will show the necessity of a very close and searching examination of the structure and anatomy of this fish, comparing it with the true salmon, before its new name is confirmed. This sexual development, so strictly analogous to the swelling of the neck in the genus *Cervus* among quadrupeds, seems to point to further research among other species of the genus, that is to say, whether there is not a similar development, though less marked, through the whole family, as at present arranged, or if found wanting in that portion of the genus with *very minute scales*, whether it may not characterise that portion consisting of *Salmo salar*, this fish and all those having *large scales*. I was struck the other day in looking over the figures of Richardson's Trout of the Arctic Regions, that there was more than one with the projecting lower jaw. Were not these fish taken during the spawning season? And may they not have received another name in the normal state? Of course the facts at present known are too scanty to found a theory upon, but should this suggestion ultimately prove to have a foundation in fact, it would be sufficient to authorise a division of the genus.

Dr. Morris mentioned in connection with this subject, that he had observed in the common brook trout (*Salmo fontinalis*) a similar elongation of the lower jaw in the spawning season.

June 29th.

Vice President BRIDGES in the Chair.

Twenty-nine members present.

The Report of the Secretary of the Biological Department was presented.

The by-laws reported by the Committee appointed March 30th, to draft a series of by-laws for the government of the Committee on Proceedings, were read for the third time, and passed.

Whereupon Dr. Fisher offered the following :

Resolved, That all previous resolutions of the Academy, prescribing the constitution, duties and powers of the Committee on Proceedings, be, and the same are hereby repealed.

Which was considered and adopted.

Dr. Leidy, by permission of the Academy, communicated the fact, that about one half of the chrysalides of the canker-worm (*Endalimia*), which had recently proved so destructive to the foliage of our shade trees, were infected by two species of *Ichnæumon*. One of the latter is comparatively large; and a single individual occupies the body of a canker-worm chrysalis. The other species is minute; and numerous individuals occupy the interior of a chrysalis.

1858.]